Message

From: Walker, Stuart [Walker.Stuart@epa.gov]
Sent: 7/30/2020 11:22:44 PM
To: Praskins, Wayne [Praskins.Wayne@epa.gov]; Manning, Karessa [manningkl@ornl.gov]
CC: Dolislager, Fredrick G. [dolislagerf1@ornl.gov]
Subject: RE: Hunters Point

See below. We can see if Fred or Karessa add some more explanation on Friday.

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From: Praskins, Wayne <Praskins.Wayne@epa.gov>
Sent: Thursday, July 30, 2020 7:06 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>; Manning, Karessa <manningkl@ornl.gov>
Cc: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Subject: RE: Hunters Point

Karessa/Stuart –

Two more questions:

1. Why did you choose a 10 x 10 x 10 room size and concrete for room material? It's what the Corps did based on the Navy runs they evaluated. Are those the most conservative? It depends on the radionuclide Are they the values the BPRG selects if you choose defaults for "site info type" rather than site-specific? Maybe for some of the radionuclides. The calculator picks the most conservative combination (room size, receptor location, room material) for each radionuclide. So if you just run the default for 10 different radionuclides, you might have an underlying assumption of 10 different combinations of room sizes, receptor location, and building material.

2. Attached is one of the Navy's BPRG Hunters Point runs. On page 2, for Am-241, I see an external exposure PRG of 7.95E-02 pCi/cm2 at 1 x 10-6. (i.e., 7.95 pCi/cm2 at 1 x 10-4). How did they get the 7.95 value? Did they use default values, as the attachment suggests?. I get 2.65 pCi/cm2 using 10-4 and default values in the online calculator.
The attached file is for a settled dust run, so its assuming its on a floor that is an infinite plane, and nothing is on the walls or ceiling. Its different assumptions than what is in the 3D or 3D/splash scenario.

Thanks!

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From: Praskins, Wayne
Sent: Wednesday, July 29, 2020 7:04 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>; Manning, Karessa <manningkl@ornl.gov>; Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Subject: RE: Hunters Point

Thanks. I got it now. I had run the default without changing room material or room position.

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From: Walker, Stuart <Walker.Stuart@epa.gov>
Sent: Wednesday, July 29, 2020 8:15 AM
To: Manning, Karessa <manningkl@ornl.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Subject: RE: Hunters Point

I was able to replicate as well. Wayne, below is a screen shot of how the results should look with some yellow highlighting in the first table that the BPRG adds to show defaults that were changed, and in the second table I added some yellow highlighting to emphasize scenario used and the ground plane results.

Variable	Resident 3-D External Default Value	Form Input Value
ED_{res} (exposure duration - resident) yr	26	26
EF_{res} (exposure frequency) day/yr	350	350
ET_{res} (exposure time - resident) hr/day	24	24
F_{AM} (area and material factor) unitless	1	1
F_{am} (area and materials factor) unitless	1	1
F_i (fraction of time spent in compartment) unitless	1	1
F_{in} (fraction time spent indoors) unitless	1	1
$F_{OFF-SET}$ (off-set factor) unitless	1	1
GSF_b (building gamma shielding factor) unitless	1	1
t_{res} (time - resident) yr	26	26
TR (target cancer risk) unitless	1.0E-06	1.0E-04
Room material	Default	Concrete
Room position	Default	Corner
Room size (ft)	Default	10 x 10 x 10

Site-specific

Resident Building PRGs for 3-D Direct External Exposure - Secular Equilibrium

Isotope	Soil Volume BPRG TR=0.0001 (pCi/g)	Soil Volume @ 1cm BPRG TR=0.0001 (pCi/g)	Soil Volume @ 5cm BPRG TR=0.0001 (pCi/g)	Soil Volume @ 15cm BPRG TR=0.0001 (pCi/g)	Ground Plane BPRG TR=0.0001 (pCi/cm²)
Secular Equilibrium BPRG for Am-241	6.50E+00	4.39E+00	1.59E+00	1.23E+00	3.80E+00

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From: Manning, Karessa <manningkl@ornl.gov>
Sent: Wednesday, July 29, 2020 8:57 AM
To: Praskins, Wayne <Praskins.Wayne@epa.gov>; Dolislager, Fredrick G. <dolislagerf1@ornl.gov>; Walker, Stuart <Walker.Stuart@epa.gov>
Subject: RE: Hunters Point

Hi Wayne,

I was able to replicate the value for Am-241 of 3.8 pCi/cm2. The only changes that should be made are TR of 0.0001 instead of 0.000001, concrete, corner, 10x10x10. Did you change the room material etc? Did you change any other inputs?

Thanks!

-Karessa

From: Praskins, Wayne <Praskins.Wayne@epa.gov>
Sent: Tuesday, July 28, 2020 9:27 PM
To: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>; Walker, Stuart <Walker.Stuart@epa.gov>; Manning, Karessa <manningkl@ornl.gov>
Subject: [EXTERNAL] FW: Hunters Point

Fred /Stuart/ Karessa –

The default BPRGs I see in the attached spreadsheet (column T in the "3-D External BPRG Individual" tab, labeled "Default Ground Plane BPRG") are different than what I see when I use the online calculator.

For example, for Am-241, I see 3.8 pCi/cm2 in the spreadsheet. (And slightly different values for the other room positions.) Using the online calculator, I get 7.95 pCi/cm2 ("External Exposure BPRG").

What am I doing wrong?

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From: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Sent: Tuesday, July 14, 2020 2:57 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>
Cc: Manning, Karessa <manningkl@ornl.gov>
Subject: RE: Hunters Point

Here are all four room positions for resident. I had to clean up the first file I sent you. These are all in SE. I can do indoor worker tomorrow.

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From: Walker, Stuart <Walker.Stuart@epa.gov>
Sent: Tuesday, July 14, 2020 5:16 PM
To: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>
Cc: Manning, Karessa <manningkl@ornl.gov>
Subject: [EXTERNAL] RE: Hunters Point

I didn't notice anything different in the attachment, it looks like just the surface factors?

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From: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Sent: Tuesday, July 14, 2020 4:58 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>
Cc: Manning, Karessa <manningkl@ornl.gov>
Subject: RE: Hunters Point

Stuart,

Karessa helped me get the attached file in shape. This is a resident run in SE mode for all isotopes. It is concrete, center of room. There is a new tab that has the new surface factors. The 3-D External BPRG Individual tab has several new columns where I post-processed the BPRG run. Column T is the default BPRG for ground plane. Column Z is where I removed the Fsurf from the BPRG. Column AA calls the new splash factors. Column AB incorporates the new splash factors (Fsurf). Column AC is just a verification of the default results.

Please review.

I will try and do the other receptor positions before I go

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From: Walker, Stuart <Walker.Stuart@epa.gov>
Sent: Tuesday, July 14, 2020 4:24 PM
To: Praskins, Wayne <Praskins.Wayne@epa.gov>
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Subject: [EXTERNAL] FW: Hunters Point

Fyi, the surface factors. **Ex. 6 Personal Privacy (PP)**

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From: Dolislager, Fredrick G. <dolislagerf1@ornl.gov>
Sent: Tuesday, July 14, 2020 11:30 AM
To: Walker, Stuart <Walker.Stuart@epa.gov>; Samuels, Caleigh <samuelsce@ornl.gov>
Subject: FW: Hunters Point

Stuart,

Attached are the draft surface factors for contaminated floors and partial walls (6 ft). This is a 10x10x10 concrete room with surface contamination. In the file you will find 4 receptor positions. I included a little table comparing the current surface factors to the new ones. You'll notice a large difference in some low energy photon emitters such as Am-241. This is to be expected as the interactions for low energy photons are heavily dependent on the soil composition used for the baselines. We are pretty happy with the data trends, but consider this a preliminary release, please. If you need anything additionally, please communicate with Caleigh and copy me.

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